ASSEMBLY, INSTALLATION, AND REMOVAL OF CONTACTS AND MODULES

FOR MINI COAXIAL CONTACTS AND MODULES

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MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 114 FOR RG316

TOOLS REQUIRED

*Center Conductor Enlarging Tool, Part # 910 121 143
*Center Conductor Forming Tool, Part # 910 121 119
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 156
Calibration Plug, Part # 414 854 104 (Included in Part # 910 121 156)
*Weight Gauge Kit, Part # 910 121 131
4.0 oz. Weight, Part # 432 026 000 (included in Part # 910 121 131)
0.5 oz. Weight, Part # 432 025 000 (included in Part # 910 121 131)

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Turn braid back over outer insulation (**Figure C**).
*4. Solder center conductor wire into center conductor contact and clean (**Figure D**). VPC solders per IPC'S J-STD-001.
NOTE: Center conductor contact and dielectric must touch.
5. Slide shield conductor over center conductor until the center conductor stops in the Teflon® shield (**Figure E**).
NOTE: Shield conductor and Teflon insulator are supplied as an assembly.

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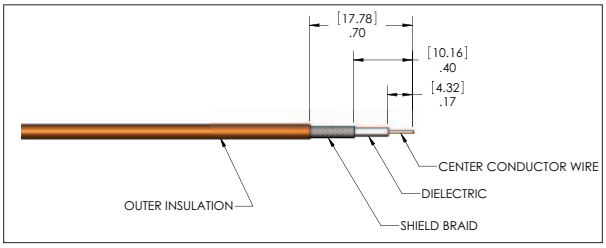

Figure A. Strip wire.

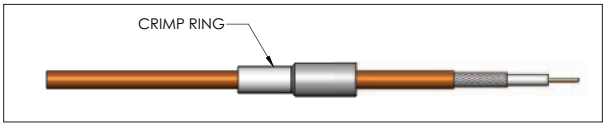

Figure B. Crimp ring.

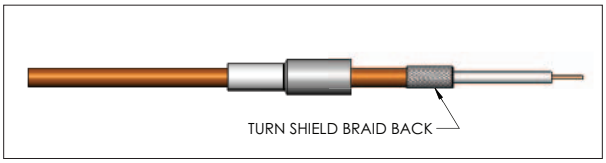

Figure C. Turn braid back.

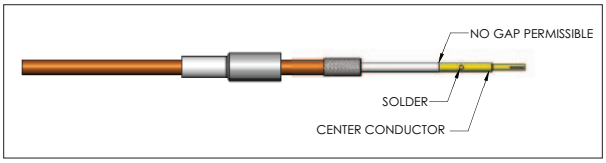

Figure D. Solder center conductor.

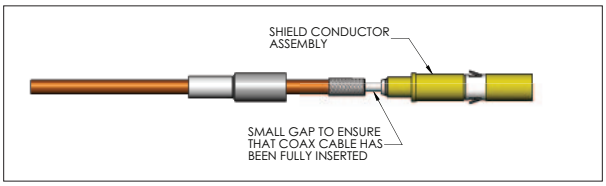

Figure E. Slide shield conductor over center conductor.

*When soldering, care must be taken so as to not deform the center conductor tip. If soldered properly, steps 8 and 9 can be skipped.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 114 FOR RG316

ASSEMBLY INSTRUCTIONS, CONTINUED

6. Calibrate the Inspection Depth Gauge, Part # 910 121 156 (**Figure F**), by loosening the dial face retaining screw until the dial face allows itself to be turned. Insert the Calibration Plug, Part # 414 854 104, into the base of the gauge. While keeping constant pressure on the plug, adjust the dial by rotating it such that the pointer points to "0." Re-tighten the retaining screw. Adjust locating markers to "40" and "80."

7. Check the .06" [1.52 mm] dimensions with the inspection depth gauge (**Figure F**). Push the contact onto the pressure plunger of the gauge. After attaining a positive stop and while holding firm pressure, push the plunger on top of the dial (to push collar over Teflon), read the dial on the gauge. If the pointer measures between "40" and "80," go to step 8. If the pointer is out of range, repeat steps 1-6.

*8. Check the minimum extraction force of 0.5 ounce with Part # 432 025 000. Slide female center conductor over approximately 3/4 of the length of the tip in the weight gauge (**Figure G**). The weight gauge should remain mated with the center conductor as the center conductor is slowly lifted and suspended in the air. If the weight gauge remains mated, move to step 9.

   If the weight gauge falls off, the extraction force is too low and the center conductor needs to be closed with the Center Conductor Forming Tool, Part # 910 121 119 (**Figure H**). Recheck the 0.5 ounce retention force.

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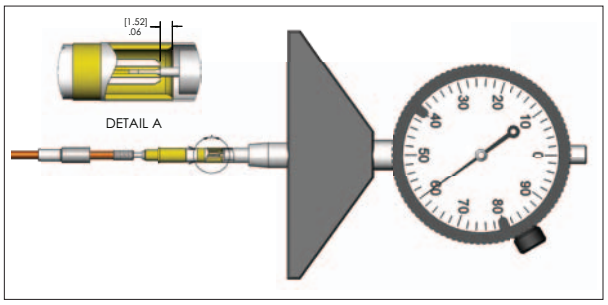

Figure F. Inspection Depth Gauge, Part # 910 121 156.

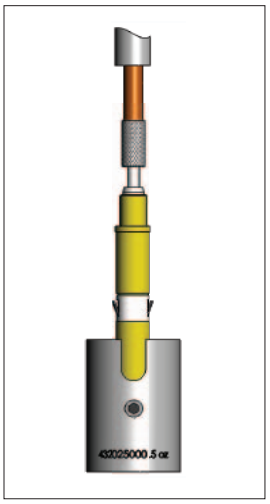

Figure G. Check minimum weight with Part # 432 025 000.

Figure H. Center Conductor Forming Tool, Part # 910 121 119.

*When soldering, care must be taken so as to not deform the center conductor tip. If soldered properly, steps 8 and 9 can be skipped.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 114 FOR RG316

ASSEMBLY INSTRUCTIONS, CONTINUED

*9. Check the maximum extraction force of 4 ounces with Part # 432 026 000. Slide the female center conductor over approximately $^{3}/_{4}$ of the length of the tip in the weight gauge (**Figure J**). The weight gauge should fall off the contact as the contact is slowly lifted and suspended in the air. If the weight gauge falls off move to step 10. If weight gauge remains mated with the contact, the extraction force is too high and the center conductor needs to be opened with the Center Conductor Enlarging Tool, Part # 910 121 143 (**Figure K**).

EXERCISE CAUTION WHEN USING THIS TOOL. INSERT AND REMOVE TOOL IN-LINE WITH CONTACT TO AVOID BREAKING TIP OF TOOL OR CONTACT.

To enlarge the center conductor, gently insert the enlarging tool into the center conductor. Pivot the enlarging tool to increase the diameter. Recheck 0.5 and 4 ounce retention force as in step 8.

10. Turn the braid back toward the front of the shield conductor (**Figure L**). If the braid extends beyond the shoulder, trim the braid back to the face of the shoulder.

11. Slide the crimp ring into position over the braid and crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure M**), in hex position "A" for the larger end first and in hex position "B" for the small section of the crimp ring (**Figure N**). To ensure proper crimp position, slide the shield conductor over the the locator pin. The wire must not be allowed to pull on center conductor during crimping (for example, long wire hanging down to floor).

12. Use the inspection depth gauge to verify the .06" [1.52 mm] dimension. See step 7.

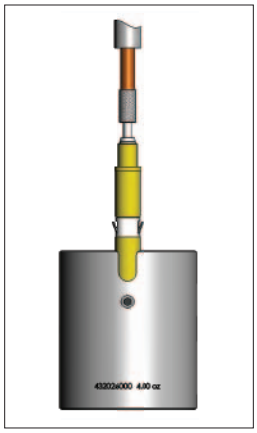

Figure J. Check maximum weight with Part # 432 026 000.

Figure K. Center Conductor Enlarging Tool, Part # 910 121 143.

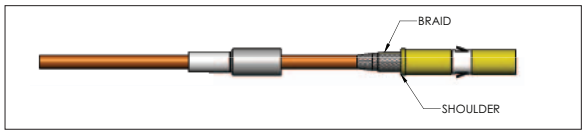

Figure L. Braid turned over shield conductor.

Figure M. Hex Crimp Tool, Part # 910 101 115.

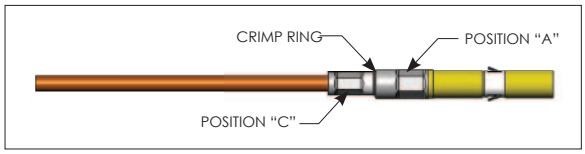

Figure N. Crimp positions.

*When soldering, care must be taken so as to not deform the center conductor tip. If soldered properly, steps 8 and 9 can be skipped.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 141 FOR RG178

TOOLS REQUIRED

Center Conductor Enlarging Tool, Part # 910 121 143
Center Conductor Forming Tool, Part # 910 121 119
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 156
Calibration Plug, Part # 414 854 104 (Included in Part # 910 121 156)
Weight Gauge Kit, Part # 910 121 131
4.0 oz. Weight, Part # 432 026 000 (included in Part # 910 121 131)
0.5 oz. Weight, Part # 432 025 000 (included in Part # 910 121 131)

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Turn braid back over outer insulation (**Figure C**).
4. Slide the spacer tube over the dielectric to edge of the braid (**Figure D**). Use heat gun to shrink spacer to hold onto dielectric.
5. Tin wire and solder into center conductor and clean (**Figure E**). VPC solders per IPC'S J-STD-001.
   NOTE: Center conductor and dielectric must touch. Solder should be visible in the hole.
6. Slide shield conductor over center conductor until the center conductor stops in the Teflon® shield. To ensure that the coaxial cable has been fully inserted into the contact, a gap between the shielding and the contact should exist after achieving positive stop (**Figure F**).
   NOTE: Shield conductor and Teflon insulator are supplied as an assembly.

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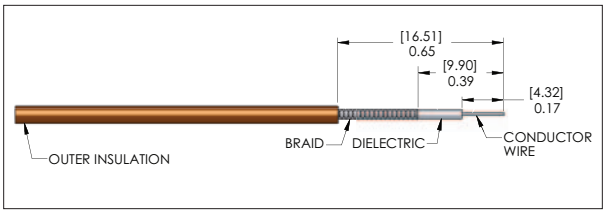

Figure A. Strip wire.

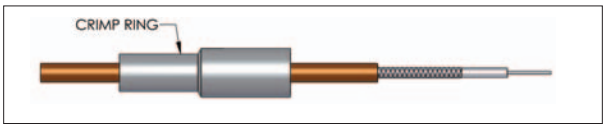

Figure B. Crimp ring.

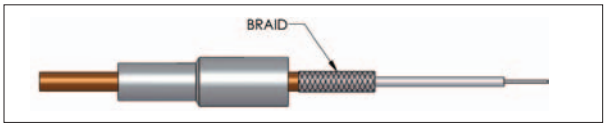

Figure C. Turn braid back.

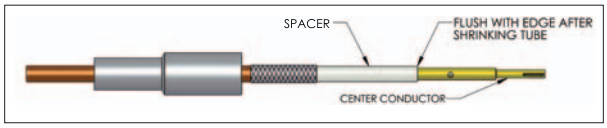

Figure D. Spacer tube.

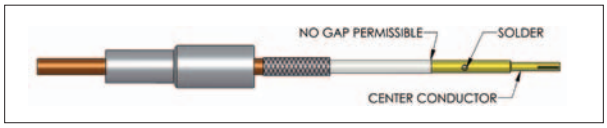

Figure E. Ensure solder is visible in hole.

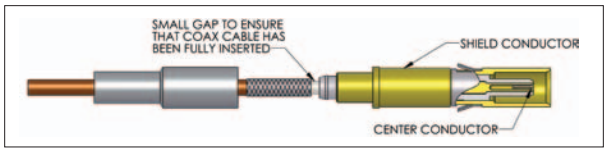

Figure F. Shield conductor.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 141 FOR RG178

ASSEMBLY INSTRUCTIONS, CONTINUED

7. Calibrate the Inspection Depth Gauge, Part # 910 121 156 (**Figure G**) by loosening the dial face retaining screw until the dial face allows itself to be turned. Insert the Calibration Plug, Part # 414 854 104 into base of gauge. While keeping constant pressure on the plug, adjust the dial by rotating it such that the pointer points to "0." Re-tighten retaining screw. Adjust locating markers to "40" and "80."

8. Check the .06" [1.52 mm] dimensions with the inspection depth gauge (**Figure G**). Push the contact onto the pressure plunger of the gauge. After attaining a positive stop and while holding firm pressure, push the plunger on top of the dial (to push collar over Teflon), read the dial on the gauge. If the pointer measures between "40" and "80," go to step 8. If the pointer is out of range, repeat steps 1-6.

9. Check the minimum extraction force of 0.5 ounce with Part # 432 025 000. Slide the female center conductor over approximately $^{3}/_{4}$ of the length of the tip in the weight gauge (**Figure H**)**.** The weight gauge should remain mated with the center conductor as the center conductor is slowly lifted and suspended in the air. If weight gauge remains mated, move to step 10.

   If the weight gauge falls off, the extraction force is too low and the center conductor needs to be closed with the Center Conductor Forming Tool, Part # 910 121 119 (**Figure J**). Recheck the 0.5 ounce retention force.

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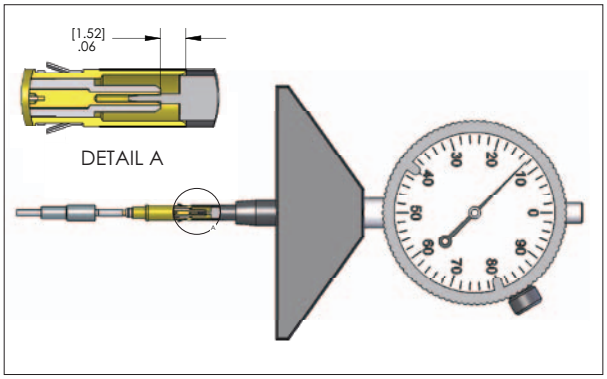

Figure G. Inspection Depth Gauge, Part # 910 121 156.

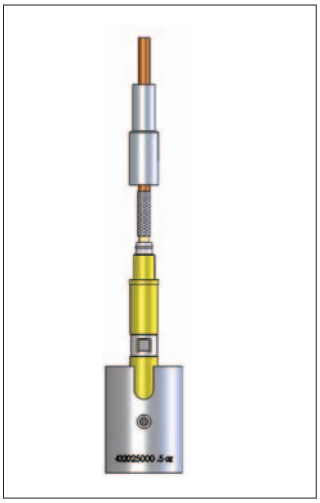

Figure H. Check minimum extraction force with Part # 432 025 000.

Figure J. Center Conductor Forming Tool, Part # 910 121 119.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 141 FOR RG178

ASSEMBLY INSTRUCTIONS, CONTINUED

10. Check the maximum extraction force of 4 ounces with Part # 432 026 000. Slide the female center conductor over approximately $^{3}/_{4}$ of the length of the tip in the weight gauge (**Figure K**). The weight gauge should fall off the contact as the contact is slowly lifted and suspended in the air. If the weight gauge falls off move to step 11. If the weight gauge remains mated with contact, the extraction force is too high and the center conductor needs to be opened with the Center Conductor Enlarging Tool, Part # 910 121 143 (**Figure L**).

EXERCISE CAUTION WHEN USING THIS TOOL. INSERT AND REMOVE TOOL IN-LINE WITH CONTACT TO AVOID BREAKING TIP OF TOOL OR CONTACT.

To enlarge the center conductor, gently insert the enlarging tool into the center conductor. Pivot the enlarging tool to increase the diameter. Recheck 0.5 and 4 ounce retention force as in step 9.

11. Turn the braid back toward the front of the shield conductor (**Figure M**). If the braid extends beyond shoulder, trim braid back to face of shoulder.

12. Slide the crimp ring into position over the braid and crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure N**) in hex position "A" for the larger end first and in hex position "C" for the smaller section of the crimp ring (**Figure O**). To ensure proper crimp position, slide the shield conductor over pin on locator attached to hex crimp tool. Wire must not be allowed to pull on center conductor during crimping (for example, long wire hanging down to floor).

15. Use the inspection depth gauge to verify the .06" [1.52 mm] dimension. See step 8.

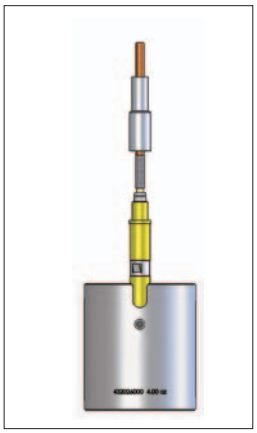

Figure K. Check maximum extraction force with Part # 432 026 000.

Figure L. Center Conductor Enlarging Tool, Part # 910 121 143.

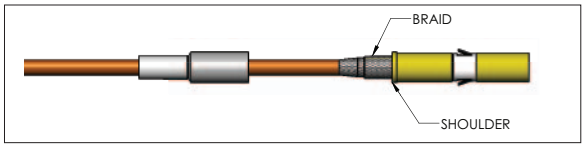

Figure M. Turn braid back over shield conductor.

Figure N. Hex Crimp Tool, Part # 910 101 115.

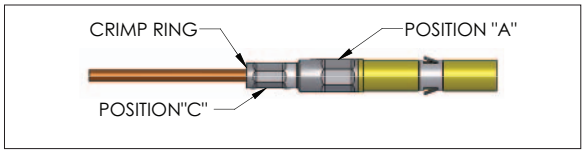

Figure O. Crimp positions.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 149 FOR RG316 DOUBLE SHIELDED

TOOLS REQUIRED

Center Conductor Enlarging Tool, Part # 910 121 143
Center Conductor Forming Tool, Part # 910 121 119
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 156
Calibration Plug, Part # 414 855 104 (Included in Part # 910 121 156)
Weight Gauge Kit, Part # 910 121 131
0.5 oz. weight, Part # 432 025 000 (included in Part # 910 121 131)
4 oz. weight, Part # 432 026 000 (included in Part # 910 121 131)

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Turn both the inner and outer braid back over the outer insulation. Turn the outer braid back and smooth then turn the inner braid back (**Figure B**).
4. Insert the center conductor of the wire into the center conductor contact, solder and clean (**Figure C**). VPC solders per IPC'S J-STD-001.
   NOTE: Center conductor contact and dielectric must touch.
5. Slide the shield conductor over the center conductor until the center conductor stops in the Teflon® insulator (**Figure D**).
   NOTE: Shield conductor and Teflon insulator are supplied as an assembly.
6. Check to ensure that the center conductor is flush with the Teflon insulator (**Figure E**).
7. Calibrate the Inspection Depth Gauge, Part # 910 121 156 (**Figure F**), by loosening the dial face retaining screw until the dial face can be turned. Insert the Calibration Plug, Part # 414 855 104 into the base of the gauge. While keeping constant pressure on the plug, adjust the dial by rotating it so that the pointer points to "0." Re-tighten the retaining screw. Adjust the locating markers to "40" and "80."
8. Check the .06" [1.52 mm] dimension with the inspection depth gauge (**Figure F**). Push the contact onto the pressure plunger of the gauge. After attaining a positive stop and while holding firm pressure, push the plunger on top of the dial (to push collar over Teflon), read the dial on the gauge. If the pointer measures between "40" and "80," go to step 9. If the pointer is out of the range, repeat steps 1-8.

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Dimensions shown: [millimeters] inches

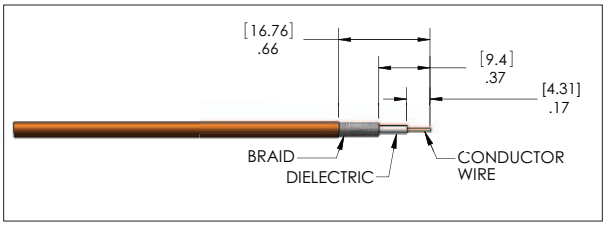

Figure A. Strip wire.

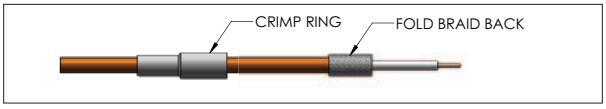

Figure B. Crimp ring.

Figure C. Assemble wire into contact.

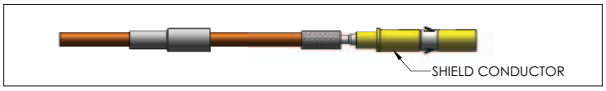

Figure D. Slide shield conductor over center conductor.

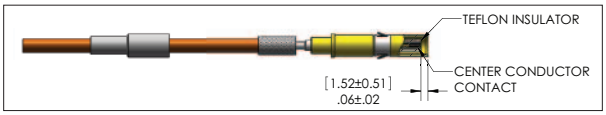

Figure E. Ensure center conductor is flush with Teflon insulator.

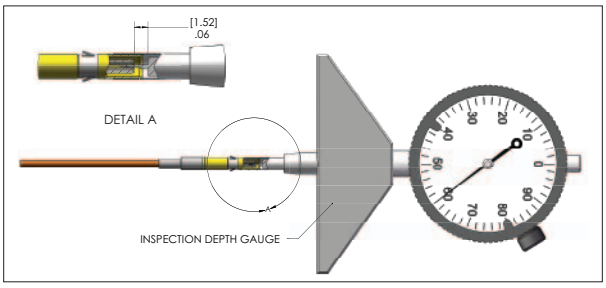

Figure F. Inspection Depth Gauge, Part # 910 121 156.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 149 FOR RG316 DOUBLE SHIELDED

ASSEMBLY INSTRUCTIONS, CONTINUED

9. Check minimum extraction force of 0.5 ounce with Part # 432 025 000. Slide female center conductor over approximately 3/4 the length of the tip in the weight gauge (**Figure G**). The weight gauge should remain mated with the center conductor as the center conductor is slowly lifted and suspended in the air. If weight gauge remains mated, move to step 10.

   If weight gauge falls off, the extraction force is too low and the center conductor needs to be closed with the Center Conductor Forming Tool, Part # 910 121 119 (**Figure H**). Recheck the 0.5 ounce retention force.

10. Check maximum extraction force of 4 ounces with Part # 432 026 000. Slide female center conductor over approximately 3/4 of the length of the tip in the weight gauge (**Figure J**). The weight gauge should fall off the contact as the contact is slowly lifted and suspended in the air. If weight gauge falls off move to step 10. If weight gauge remains mated with the contact, the extraction force is too high and the center conductor needs to be opened with the Center Conductor Enlarging Tool, Part # 910 121 143 (**Figure K**).

EXERCISE CAUTION WHEN USING THIS TOOL. INSERT AND REMOVE TOOL IN-LINE WITH CONTACT TO AVOID BREAKING TIP OF TOOL OR CONTACT.

   To enlarge the center conductor, gently insert the enlarging tool into the center conductor. Pivot the enlarging tool to increase the diameter. Recheck 0.5 and 4 ounce retention force as in step 9.

11. Turn both braids back over the shield conductor (**Figure L**). If the braid extends beyond the shoulder, trim the braid back to the face of the shoulder.

12. Slide the crimp ring over the braid and shield conductor (**Figure M**) and crimp using the Hex Crimp Tool, Part # 910 101 115, in hex position "A". To ensure proper crimp position, slide the shield conductor over the dowel pin on the hex crimp tool. The wire must not be allowed to pull on the center conductor during crimping (For example, long wire hanging down to floor).

13. Use the inspection depth gauge to verify the .06" [1.52 mm] dimension. See step 8.

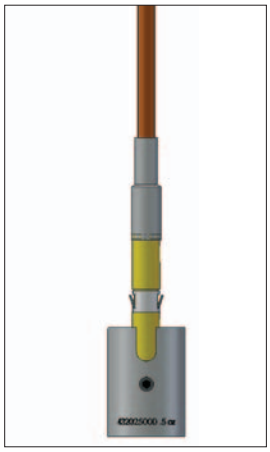

Figure G. Check minimum extraction force with Part # 432 025 000.

Figure H. Center Conductor Forming Tool, Part # 910 121 119.

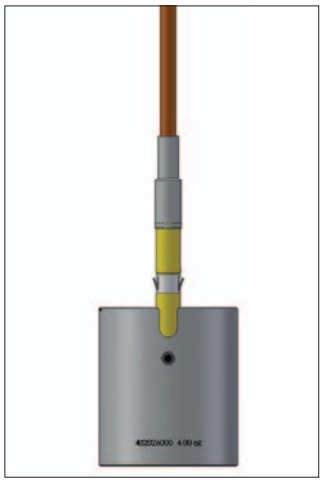

Figure J. Check maximum extraction force with Part # 432 026 000.

Figure K. Center Conductor Enlarging Tool, Part # 910 121 143.

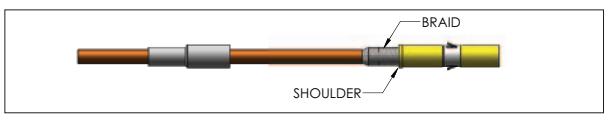

Figure L. Turn braids back over shield conductor.

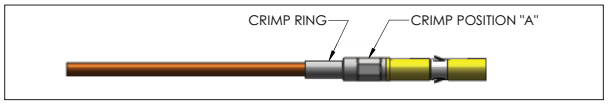

Figure M. Slide the crimp ring over the braid and crimp.

MINI COAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 104 154 FOR RG58

TOOLS REQUIRED

Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 156

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip outer jacket (**Figure A**).
2. Cut $^{3}/_{16}$ tubing 1.75" long and slide over jacket (**Figure A**).
3. Slide crimp ring over braid (**Figure B**).
4. Turn braid over crimp ring and cut .125" off dielectric and strip center conductor (**Figure C**).
5. Solder wire into center contact and clean. Make sure contact touches dielectric (**Figure D**). VPC solders per IPC'S J-STD-001.
6. Slide shield assembly over center conductor (**Figure E**). *NOTE: Make sure the Teflon® in the shield assembly touches wire dielectric.*
7. Turn braid back toward the front of the shield conductor (**Figure F**). If braid extends beyond shoulder, trim back to face of shoulder.
8. Slide the crimp ring into position over braid and crimp using Hex Crimp Tool, Part # 910 101 115, in hex position "A" (**Figure G**). To ensure proper crimp position slide shield conductor over dowel pin in the crimp locator. Wire must not be allowed to pull on the center conductor during crimping (Example: Long wire hanging down to floor).
9. Slide tubing to back of shoulder and shrink into place. Make sure that the tubing does not extend over the shoulder of the shield conductor.
10. It is recommended that the Inspection Depth Gauge, Part # 910 121 156, be used to verify the .06 +/- .02 dimension (**Figure H**).

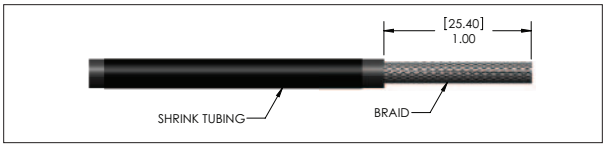

Figure A. Strip outer jacket.

Figure B. Slide crimp ring over braid.

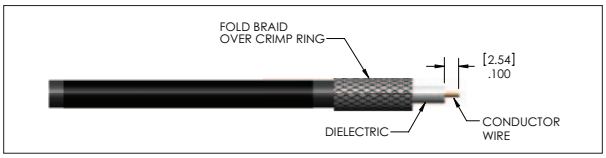

Figure C. Fold braid back.

Figure D. Solder center conductor.

Figure E. Install shield conductor.

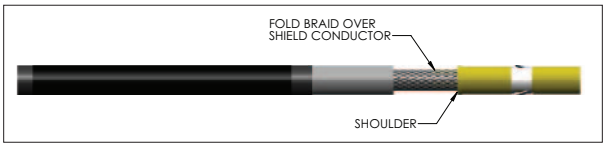

Figure F. Turn braid back over contact.

Figure G. Crimp positions.

Figure H. Verify dimension.

MINI COAXIAL RECEIVER, SOLDER SLEEVE®, CONTACT ASSEMBLY

PART # 610 104 142 FOR RG316

TOOLS REQUIRED

Solder Kit, includes Holding Fixture and Adapter, Part # 910 121 144
Adapter (for those who already own a holding fixture), Part # 910 121 149
Steinel Heat Gun with nozzle, Part # 910 121 160 - 110V or Part # 910 121 167 - 220V

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Straighten the center conductor making sure the stranded center conductor is twisted into its original lay.
3. Tin stranded center conductor with Sn63 solder per QQ-S-571. Use RMA flux per MIL-F-14256 (Alpha #611 or equivalent).
4. Make sure the shield braid is trimmed evenly and no loose strands are extending out across the exposed dielectric or cable jacket.
5. Smooth the braid ends flat against the cable dielectric.
6. Slide the contact over the end of the prepared cable, and carefully push the contact onto the cable until it stops. Rotating the contact slightly during cable insertion will help prevent the braid from catching.
7. Inspect for proper insertion (**Figure B**). The center conductor must be visible through one of the forward inspection windows. The distance from the rear of the contact outer body to the cable jacket insulation should be 0.065" [1.65 mm].
8. Install the Adapter, Part # 910 121 149, onto the Holding Fixture, Part # 910 121 144 (**Figure C**). Insert contact in the adapter side marked "S" for socket, and set up the dimensions (**Figure C**).
9. Insert the contact/cable assembly into the adapter. Clamp the cable in the holding fixture. The cable must remain fully inserted in the contact and the contact must be fully inserted in the adapter for the adapter to act as a heat sink. The cable must be straight between the contact and the cable clamp.

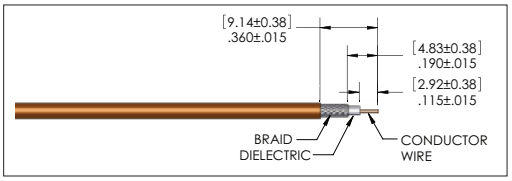

Figure A. Strip wire.

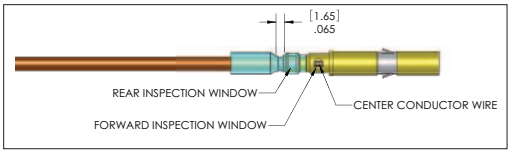

Figure B. Contact on wire.

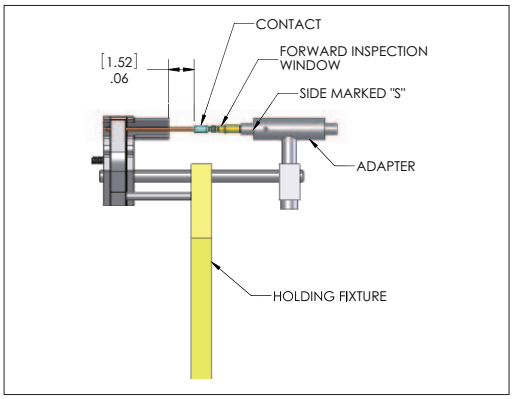

Figure C. Holding fixture.

10. Attach the appropriate reflector to the heating tool. See instruction sheet accompanying heat gun for instructions and safety precautions.
11. Using the holding fixture, position the contact in the heating tool reflector with the forward inspection window centered in the reflector. Continue heating until the small solder preform in the forward inspection window has melted and flowed. The large solder preform in the rear inspection window should have melted and flowed by this time; if it has not, direct hot air at the rear inspection window until it does.
12. If contact is UNDERHEATED, there will be visible remnants of the original shapes of the solder preforms. An underheated contact must be re-heated. If contact is OVERHEATED, solder will wick away from the joint areas, leaving no solder fillets. An overheated contact must be removed and a new contact installed.
13. After the contact has cooled for at least 10 seconds, remove the contact and cable from the holding fixture.
14. Inspect the completed termination for correct assembly. The cable shield must extend into the contact at least as far as the front edge of the rear inspection windows. The center conductor must be visible through one of the forward inspection windows.

MINI COAXIAL RECEIVER, SOLDER SLEEVE® , CONTACT ASSEMBLY

PART # 610 104 142 FOR RG178 AND JOY CABLE (TYPE 033, 93 OHMS)

TOOLS REQUIRED

Solder Kit, includes Holding Fixture and Adapter, Part # 910 121 144
Adapter (for those who already own a holding fixture), Part # 910 121 149
Steinel Heat Gun with nozzle, Part # 910 121 160 - 110V or Part # 910 121 167 - 220V

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Straighten the center conductor making sure the stranded center conductor is twisted into its original lay.
3. Tin stranded center conductor with Sn63 solder per QQ-S-571. Use RMA flux per MIL-F-14256 (Alpha #611 or equivalent).
4. Fold the center conductor back on itself (**Figure B**).
5. Make sure the shield braid is trimmed evenly and no loose strands are extending out across the exposed dielectric or cable jacket.
6. Smooth the braid ends flat against the cable jacket.
7. Slip the contact over the end of the prepared cable, and carefully push the contact onto the cable until it stops. Rotating the contact slightly during cable insertion will help prevent the braid from catching.
8. Inspect for proper insertion (**Figure C**). The center conductor must be visible through one of the forward inspection windows. The distance from the rear of the contact outer body to the edge of the braid should be 0.015" [0.38 mm].
9. Install the Adapter, Part # 910 121 149, onto the Holding Fixture, Part # 910 121 144 (**Figure D**). Insert a contact in the adapter side marked "S" for socket, and set up the dimensions (**Figure D**).
10. Insert the contact/cable assembly into the adapter. Clamp the cable in the holding fixture. The cable must remain fully inserted in the contact and the contact must be fully inserted in the adapter for adapter to act as a heat sink. The cable must be straight between the contact and the cable clamp.
11. Attach the appropriate reflector to the heating tool. See instruction sheet accompanying heat gun for instructions and safety precautions.
12. Using the holding fixture, position the contact in the heating tool reflector with the forward inspection window centered in the reflector. Continue heating until the small solder preform in the forward inspection window has melted and flowed. The large solder preform in the rear inspection window should have melted and flowed by this time; if it has not, direct hot air at the rear inspection window until it does.

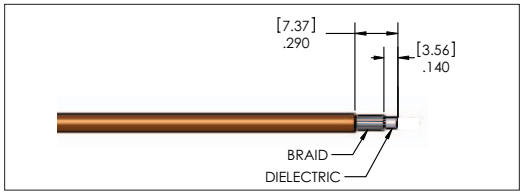

Figure A. Strip wire.

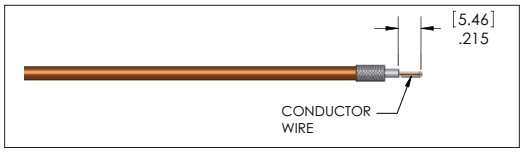

Figure B. Fold center conductor.

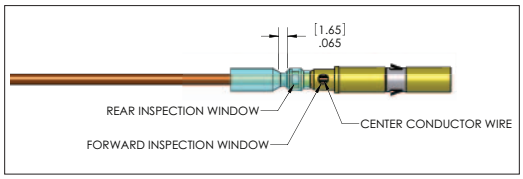

Figure C. Contact on wire.

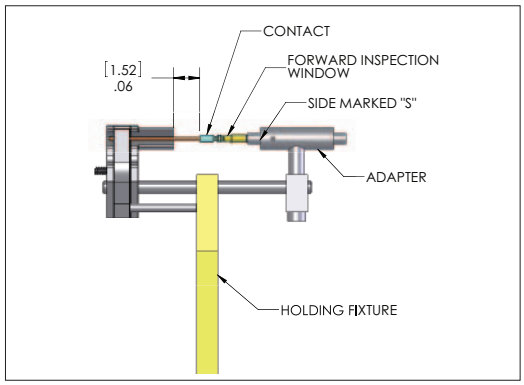

Figure D. Holding fixture.

13. If contact is UNDERHEATED, there will be visible remnants of the original shapes of the solder preforms. An underheated contact must be re-heated. If contact is OVERHEATED, solder will wick away from the joint areas, leaving no solder fillets. An overheated contact must be removed and a new contact installed.
14. After the contact has cooled for at least 10 seconds, remove the contact and cable from the holding fixture.
15. Inspect the completed termination for correct assembly. The cable shield must extend into the contact at least as far as the front edge of the rear inspection windows. The center conductor should be visible through one of the forward inspection windows.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 115 FOR RG316

TOOLS REQUIRED

Outer Shield Conductor Expanding Tool, Part # 910 121 142
Outer Shield Conductor Forming Tool, Part # 910 121 126
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 157
Calibration Plug, Part # 414 855 103 (included in Part # 910 121 157)
Weight Gauge Kit, Part # 910 121 155
3 oz. weight, Part # 414 852 000 (included in kit Part # 910 121 155)
20 oz. weight, Part # 414 853 000 (included in kit Part # 910 121 155)

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Turn braid back over outer insulation (**Figure C**).
4. Solder wire into center conductor and clean (**Figure D**). VPC solders per IPC'S J-STD-001.
   NOTE: Center conductor and dielectric must touch.
5. Slide the shield conductor over the center conductor until the center conductor stops in the Teflon® shield (**Figure E**).
   NOTE: Shield conductor and teflon insulator are supplied as an assembly.
6. Turn the braid back toward the front of the shield conductor (**Figure F**). If braid extends beyond shoulder, trim back to face of shoulder.

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Dimensions shown: [millimeters]
inches

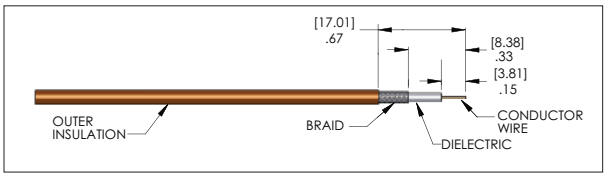

Figure A. Strip wire.

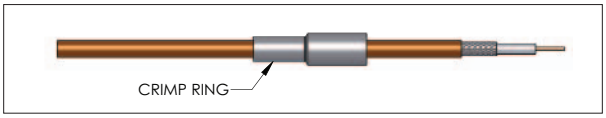

Figure B. Crimp ring.

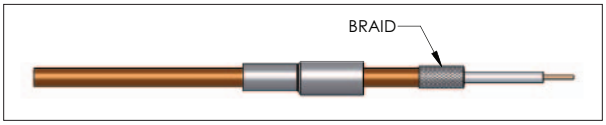

Figure C. Fold braid back.

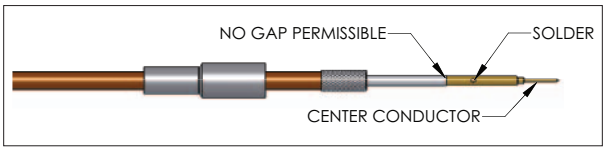

Figure D. Solder center conductor wire.

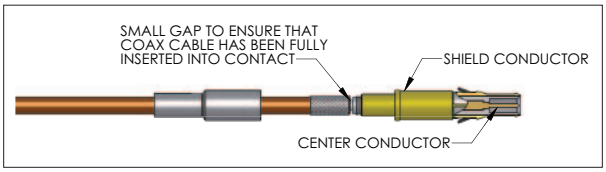

Figure E. Slide shield conductor on.

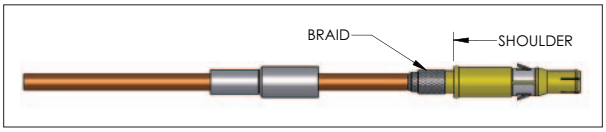

Figure F. Fold braid over.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 115 FOR RG316

ASSEMBLY INSTRUCTIONS, CONTINUED

7. Slide crimp ring into position over the braid (**Figure G**). Do not crimp.

8. Calibrate the Inspection Depth Gauge, Part # 910 121 157 (**Figure H**) by loosening the dial face retaining screw until the dial face allows itself to be turned. Insert the Calibration Plug, Part # 414 855 103 into base of gauge. While keeping constant pressure on the plug, adjust the dial by rotating it such that the pointer points to "0." Re-tighten retaining screw. Adjust locating markers to "20" and "90."

9. Check the .01 [.25 mm] dimension (**Figure J**) with the inspection depth gauge (**Figure H**). Push the contact onto the pressure plunger of the gauge. After attaining a positive stop and while holding firm pressure, push the plunger on top of the dial (to push collar over Teflon), read the dial on the gauge. If the pointer measures between "20" and "90," go to step 10. If the pointer is out of the range, repeat steps 1-9.

10. To ensure proper crimp position, slide shield conductor over the locator pin (**Figure K**). Crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure L**) in hex position "A" for the larger end first, and in hex position "B" for the smaller section of the crimp ring. Wire must not be allowed to pull on the center conductor during crimping (for example, long wire hanging down to floor).

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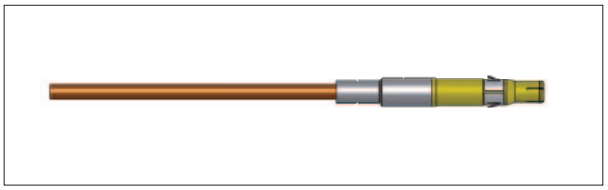

Figure G. Slide crimp ring over braid.

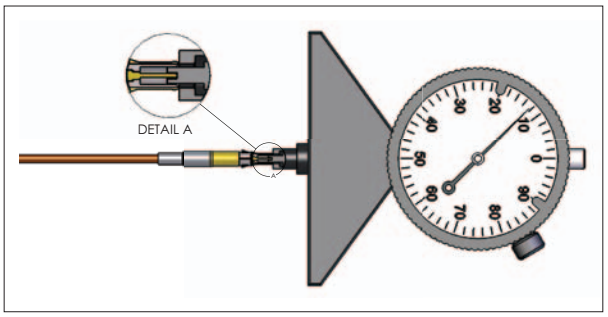

Figure H. Inspection Depth Gauge, Part # 910 121 157.

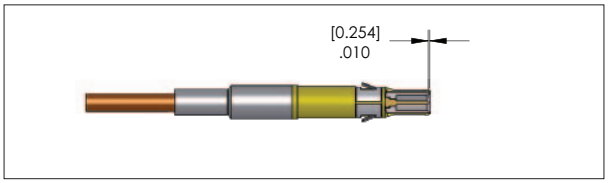

Figure J. Check dimensions.

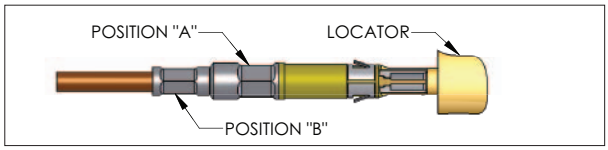

Figure K. Slide shield conductor over pin on locator.

Figure L. Hex Crimp Tool, Part # 910 102 115

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 115 FOR RG316

ASSEMBLY INSTRUCTIONS, CONTINUED

11. Check the minimum extraction force of 3 ounces with Part # 414 852 000. Slide contact the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip. Take care not to insert chamfer of contact the weight gauge tip (**Figure M**). The weight gauge should remain mated with the contact as the contact is slowly lifted and suspended in the air. If weight gauge remains mated move to step 12. If weight gauge falls off, the extraction force is too low and the shield conductor needs to be opened up with the Outer Shield Conductor Expanding Tool, Part # 910 121 142 (**Figure N**). To enlarge the shield conductor, gently insert the enlarging tool into the contact. Be careful not to bend the contact center conductor. Once inserted into the contact, pivot the enlarging tool to increase the shield diameter. Repeat until 3 ounce weight gauge can be held by contact.

12. Check the maximum extraction force of 20 ounces with Part # 414 853 000. Slide contact the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip. Take care not to insert chamfer of contact the weight gauge tip (**Figure O**). The weight gauge should fall off the contact as the contact is slowly lifted and suspended in the air. If the weight gauge falls off move to step 13. If weight gauge remains mated with contact, the extraction force is too high and the shield conductor needs to be closed with the Outer Shield Conductor Forming Tool, Part # 910 121 126 (**Figure P**). Squeezing the tool handles will reposition the contact legs. This procedure should be done in three different locations (approximately 120° apart) on the same shield to obtain proper sizing. Repeat steps 11 and 12. Do not pass slotted end of contact.

13. Use the inspection depth gauge to verify the .01" [.25 mm] dimension. See step 9.

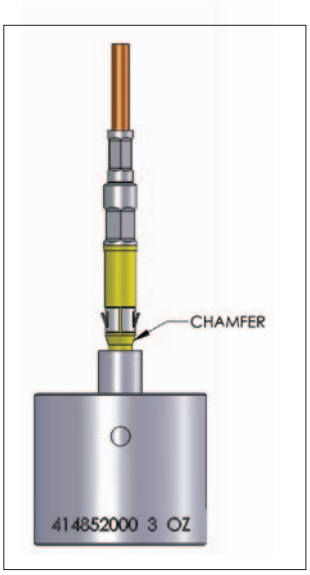

Figure M. Check minimum extraction force with Part # 414 852 000.

Figure N. Outer Shield Conductor Expanding Tool, Part # 910 121 142.

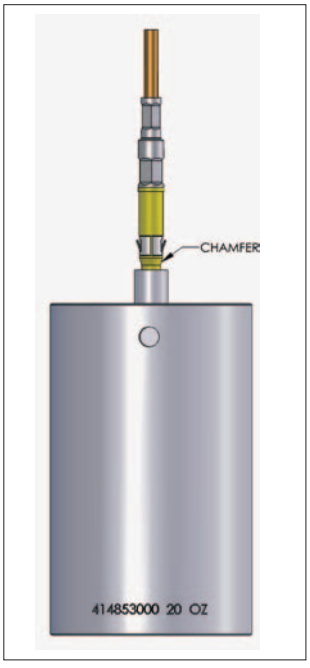

Figure O. Check maximum extraction force with Part # 414 853 000.

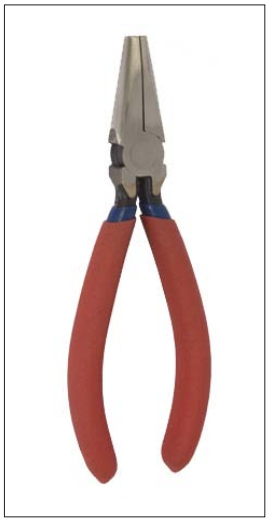

Figure P. Outer Shield Conductor Forming Tool, Part # 910 121 126.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 130 FOR RG178, PART # 610 103 157 FOR RG178

TOOLS REQUIRED

Outer Shield Conductor Expanding Tool, Part # 910 121 142
Outer Shield Conductor Forming Tool, Part # 910 121 126
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 157
Calibration Plug, Part # 414 855 103 (included in Part # 910 121 157)
Weight Gauge Kit, Part # 910 121 155
3 oz. weight, Part # 414 852 000 (included in kit Part # 910 121 155)
20 oz. weight, Part # 414 853 000 (included in kit Part # 910 121 155)

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Turn braid back over outer insulation (**Figure C**).
4. Slide the spacer tube over dielectric to edge of the braid (**Figure D**). Heat spacer tube until spacer shrinks to hold onto dielectric.
5. Slide the center conductor wire into the center conductor contact and solder. Clean solder joint (**Figure D**). VPC solders per IPC'S J-STD-001.
   NOTE: Center conductor and dielectric must touch.
6. Slide the shield conductor over the center conductor until the center conductor stops in the Teflon® shield. To ensure that coaxial cable has been fully inserted into contact, ensure that a gap is between shielding and contact when achieving positive stop (**Figure E**).
   NOTE: Shield conductor and teflon insulator are supplied as an assembly.
7. Turn braid back over the shield conductor (**Figure F**). If braid extends beyond shoulder, trim back to face of shoulder.

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Dimensions shown: [millimeters]
inches

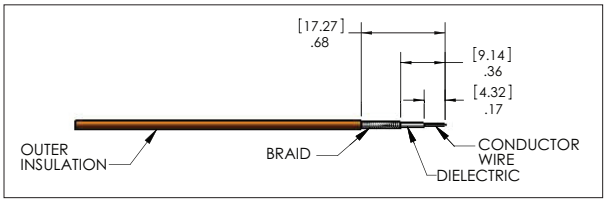

Figure A. Strip wire.

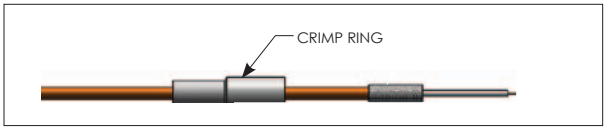

Figure B. Crimp ring.

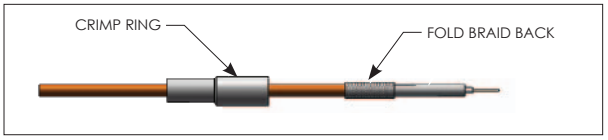

Figure C. Turn braid back.

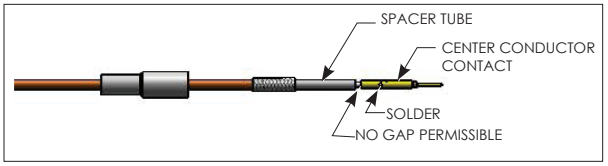

Figure D. Install center conductor contact.

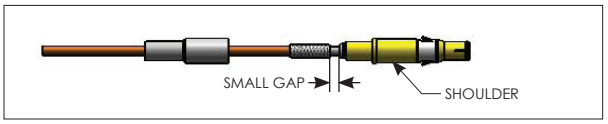

Figure E. Install shield conductor.

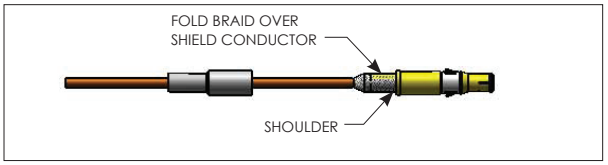

Figure F. Turn braid over contact.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 130 FOR RG178, PART # 610 103 157 FOR RG178

ASSEMBLY INSTRUCTIONS, CONTINUED

8. Slide crimp ring into position over the braid (**Figure G**). Do not crimp.

9. Calibrate the Inspection Depth Gauge, Part # 910 121 157 (**Figure H**), by loosening the dial face retaining screw until the dial face allows itself to be turned. Insert the Calibration Plug, Part # 414 855 103, into base of gauge. While keeping constant pressure on the plug, adjust the dial by rotating it such that the pointer points to "0." Re-tighten retaining screw. Adjust locating markers to "20" and "90."

10. Check the .01" [.25 mm] dimension (**Figure H**) by using Part # 910 121 157 (**Figure H**). Insert contact into the gauge and push contact into collar until contact stops. If pointer is between the two markers, go to step 11. If the pointer is out of the range of the two markers, repeat steps 1-10.

11. To ensure proper crimp position, slide the shield conductor over the locator pin (**Figure G**). Crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure J**) in hex position "A" for the larger end first, and in hex position "C" for the smaller section of the crimp ring. Wire must not be allowed to pull on the center conductor during crimping (for example, long wire hanging down to floor).

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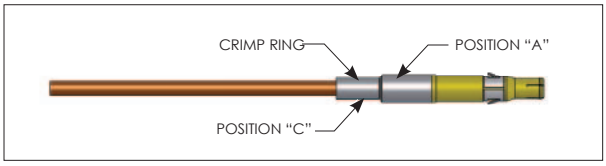

Figure G. Crimp locations.

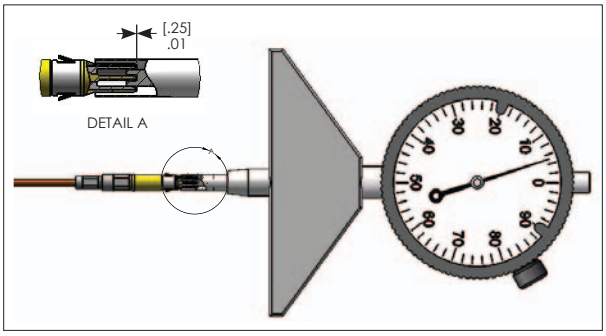

Figure H. Inspection Depth Gauge, Part # 910 121 157.

Figure J. Hex Crimp Tool, Part # 910 101 115.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 130 FOR RG 178 / 610 103 157 FOR RG 178

ASSEMBLY INSTRUCTIONS, CONTINUED

12. Check the minimum extraction force of 3 ounces with Part # 414 852 000. Slide contact the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip. Take care not to insert the chamfer of contact the weight gauge tip (**Figure K**). The weight gauge should remain mated with the contact as the contact is slowly lifted and suspended in the air. If the weight gauge remains mated move to step 13. If weight gauge falls off, the extraction force is too low and the shield conductor needs to be opened up with the Outer Shield Conductor Expanding Tool, Part # 910 121 142 (**Figure L**). To enlarge the shield conductor, gently insert the enlarging tool into the contact. Be careful not to bend the contact center conductor. Once inserted into the contact, pivot the enlarging tool to increase the shield diameter. Repeat until 3 ounce weight gauge can be held by contact.

13. Check the maximum extraction force of 20 ounces with Part # 414 853 000. Slide contact the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip. Take care not to insert chamfer of contact the weight gauge tip (**Figure M**). The weight gauge should fall off the contact as the contact is slowly lifted and suspended in the air. If weight gauge falls off move to step 14. If weight gauge remains mated with contact, the extraction force is too high and the shield conductor needs to be closed with the Outer Shield Conductor Forming Tool, Part # 910 121 126 (**Figure N**). Squeezing the tool handles will reposition the contact legs. This procedure should be done in three different locations approximately 120° apart on the same shield to obtain proper sizing. Repeat steps 12 and 13.

14. Use the inspection depth gauge to verify the .01" [.25 mm] dimension. See step 10.

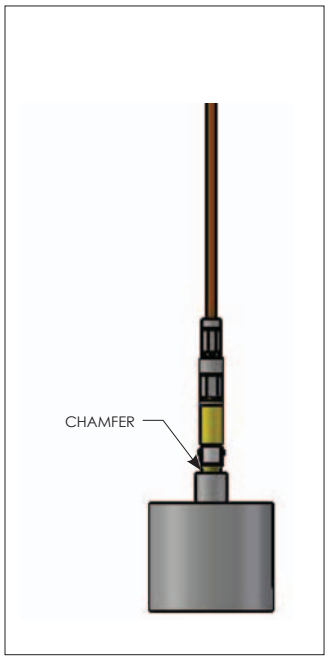

Figure K. Check minimum extraction force with Part # 414 852 000.

Figure L. Outer Shield Conductor Expanding Tool, Part # 910 121 142.

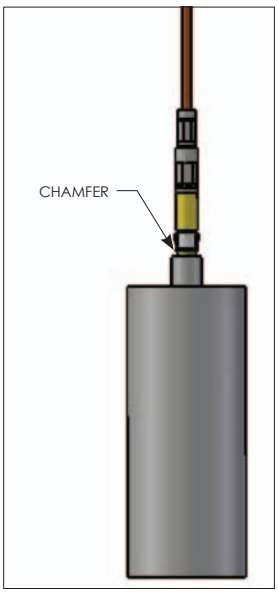

Figure M. Check maximum extraction force with Part # 414 853 000.

Figure N. Shield Conductor Forming Tool, Part # 910 121 126.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 136 FOR 24 AWG, PART # 610 103 166 FOR 24 AWG – 26 AWG
PART # 610 103 172 FOR 22 AWG

TOOLS REQUIRED
Crimp Tool, Part # 910 101 118
Crimp Locator, Part # 910 104 128

Dimensions shown: [millimeters]
inches

CRIMP TOOL SETUP

1. Set up Crimp Tool, Part # 910 101 118 (**Figure A**), by loosening the latch locking screw (counter-clockwise, until turning stops). Remove any previously used locator.

2. Insert the open end of the Locator, Part # 910 104 128 (**Figure B**), into the crimp tool contact locator retainer. Slide the retaining latch toward the locator until the locator is securely locked into place. The locator may have to be twisted to allow the latch to retain it. Tighten the latch locking screw.

ASSEMBLY INSTRUCTIONS

1. Select correct crimp setting for gauge of wire and contact to be used. See Table below. While in closed position, check diameter of crimp tool with gauge pins to be sure setting is correct. (This should be done periodically during use to compensate for wear). For more information about gauge pins, visit vpc.com/gaugepins. See calibration instructions for Part # 910 101 102/103 for pin gauge verification instructions.

2. Strip wire (**Figure C**).

3. Slide tubing onto wire (**Figure C**).

4. Insert contact with wire in place to the depth allowed by die (**Figure D**).

5. Close crimp tool completely until it automatically releases.

6. Contact should be crimped in correct position with no fractures or loose crimp.

7. Gently pull wire to check crimp.

8. Slide tubing into position and shrink (**Figure E**).

CRIMP SETTINGS

WIRE GAUGE	STRIP LENGTH (IN [MM])	MAX. (IN [MM])	MIN. (IN [MM])	PULLOUT FORCE (LBS [N])
26	0.160 [4.06]	0.034 [8.63]	0.031 [7.87]	2 [8.89]
24	0.160 [4.06]	0.039 [9.91]	0.035 [8.89]	2 [8.89]
22	0.160 [4.06]	0.037 [9.39]	0.033 [8.38]	2 [8.89]

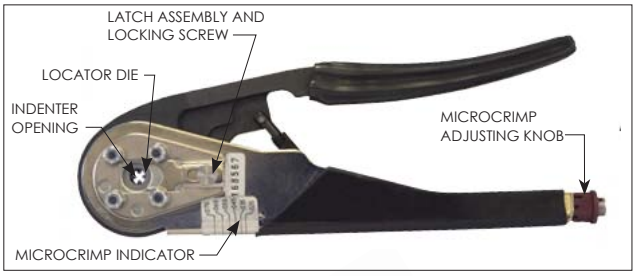

Figure A. Crimp Tool, Part # 910 101 118.

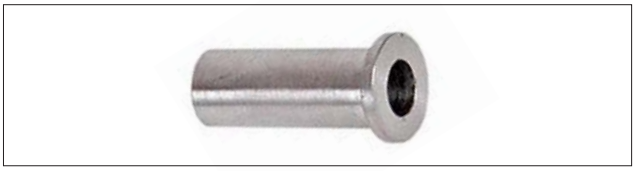

Figure B. Locator, Part # 910 104 128.

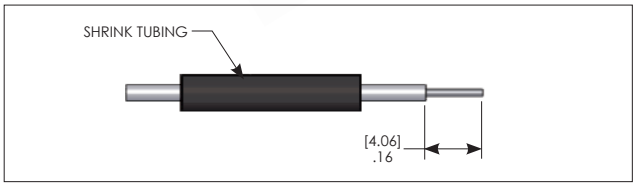

Figure C. Stripped wire with tubing.

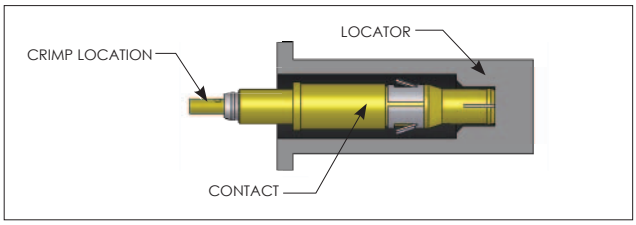

Figure D. Contact in locator.

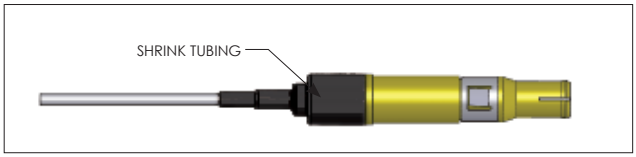

Figure E. Shrink tubing must cover crimp.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 152 FOR RG316 DOUBLE SHIELDED

TOOLS REQUIRED

Outer Shield Conductor Expanding Tool, Part # 910 121 142
Outer Shield Conductor Forming Tool, Part # 910 121 126
Hex Crimp Tool, Part # 910 101 115
Inspection Depth Gauge, Part # 910 121 157
Calibration Plug, Part # 414 855 103 (included in Part # 910 121 157)
Weight Gauge Kit, Part # 910 121 155
3 oz. weight, Part # 414 852 000 (included in kit Part # 910 121 155)
20 oz. weight, Part # 414 853 000 (included in kit Part # 910 121 155)

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Slide the crimp ring onto the wire (**Figure B**).
3. Fold the outer braid back and smooth then fold the inner braid back (**Figure B**).
4. Insert the center conductor of the wire into the center conductor contact and solder (**Figure C**). VPC solders per IPC'S J-STD-001. *NOTE: Center conductor and dielectric must touch.*
5. Slide the shield conductor over the center conductor until the center conductor stops in the Teflon® shield (**Figure D**). *NOTE: Shield conductor and Teflon® insulator are supplied as an assembly.*
6. Check to ensure that the Teflon® insulator is flush with the tip of the shield conductor (**Figure E**).
7. Turn both braids back over the shield conductor (**Figure F**). If the braid extends beyond shoulder, trim braid back to face of shoulder.

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Dimensions shown: [millimeters]
inches

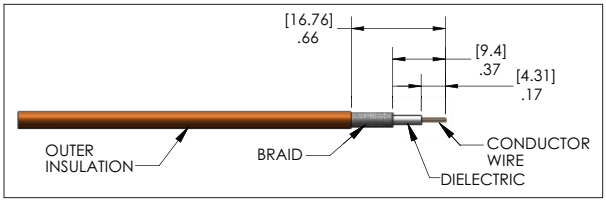

Figure A. Strip wire.

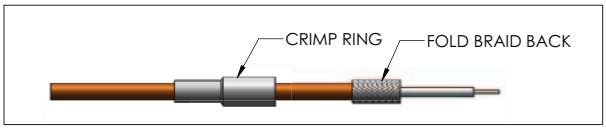

Figure B. Fold braid back.

Figure C. Install center conductor.

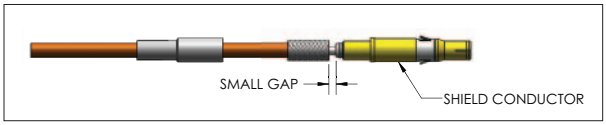

Figure D. Install shield conductor.

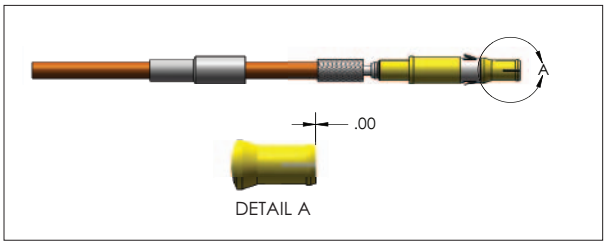

Figure E. Check flush dimension.

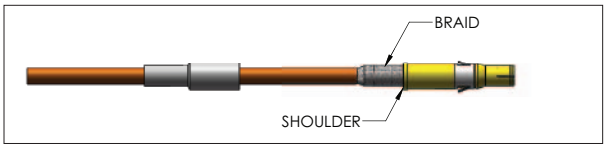

Figure F. Turn braid over contact.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 152 FOR RG316 DOUBLE SHIELDED

ASSEMBLY INSTRUCTIONS, CONTINUED

8. Slide the crimp ring over the braid and shield conductor (**Figure G**). Do not crimp.

9. Calibrate the Inspection Depth Gauge, Part # 910 121 157 (**Figure H**) by loosening the dial face retaining screw until the dial face allows itself to be turned. Insert the Calibration Plug, Part # 414 855 103 into base of gauge. While keeping constant pressure on the plug, adjust the dial by rotating it such that the pointer points to "0." Re-tighten retaining screw. Adjust locating markers to "20" and "90."

10. Check the .01" [.25 mm] dimension (**Figure H**) with the inspection depth gauge. Push the contact onto the pressure plunger of the gauge. After attaining a positive stop and while holding firm pressure, push the plunger on top of the dial (to push collar over Teflon), read the dial on the gauge. If the pointer measures between "20" and "90," go to step 11. If the pointer is out of the range, repeat steps 1-10.

11. To ensure proper crimp position, slide shield conductor over the locator pin (**Figure J**). Crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure K**) in hex position "A" (**Figure J**). Wire must not be allowed to pull on the center conductor during crimping (for example, long wire hanging down to floor).

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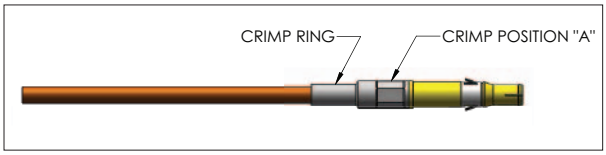

Figure G. Crimp ring.

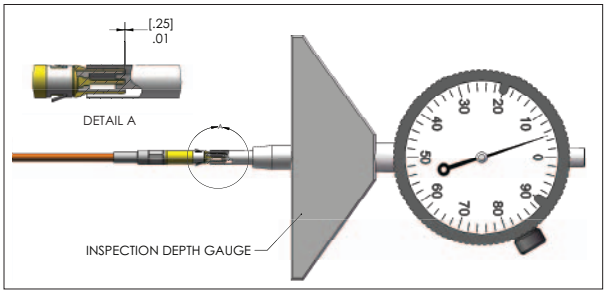

Figure H. Inspection Depth Gauge, part # 910 121 157.

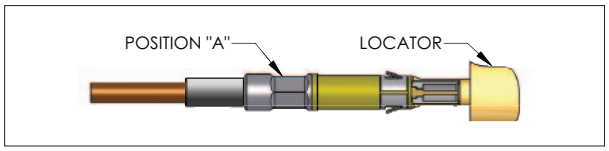

Figure J. Crimp positions.

Figure K. Hex Crimp Tool, part # 910 101 115.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 152 FOR RG316 DOUBLE SHIELDED

ASSEMBLY INSTRUCTIONS, CONTINUED

12. Check the minimum extraction force of 3 ounces with Part # 414 852 000. Slide contact into the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip - be careful not to insert chamfer of contact the weight gauge tip (**Figure L**). The weight gauge should remain mated with the contact as the contact is slowly lifted and suspended in the air. If the weight gauge remains mated move to step 12. If the weight gauge falls off, the extraction force is too low and the shield conductor needs to be opened up with the Outer Shield Conductor Expanding Tool, Part # 910 121 142 (**Figure M**). To enlarge the shield conductor, gently insert the enlarging tool into the contact. Be careful not to bend the contact center conductor. Once inserted into the contact, pivot the enlarging tool to increase the shield diameter. Repeat until the 3 ounce weight gauge can be held by contact.

13. Check the maximum extraction force of 20 ounces with Part # 414 853 000. Slide the contact into the weight gauge tip. Insert approximately 0.15" [3.81 mm] into tip - be careful not to insert chamfer of contact the weight gauge tip (**Figure N**). The weight gauge should fall off as the contact is slowly lifted and suspended in the air. If the weight gauge falls off move to step 13. If the weight gauge remains mated with contact, the extraction force is too high and the shield conductor needs to be closed with the Outer Shield Conductor Forming Tool, Part # 910 121 126 (**Figure O**). Squeezing the tool handles will reposition the contact legs. This procedure should be done in three different locations (approximately 120° apart) on the same shield to obtain proper sizing. Repeat steps 12 and 13. Do not pass slotted end of contact.

14. Use the inspection depth gauge to verify the .01" [.25 mm] dimension. See step 10.

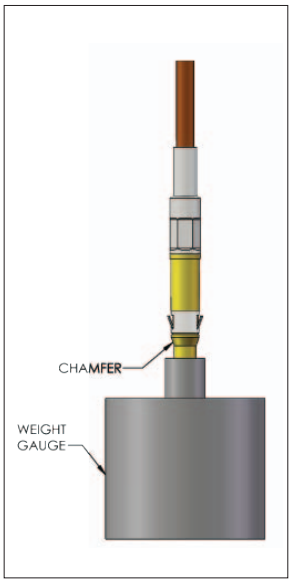

Figure L. Check minimum extraction force with Part # 414 852 000.

Figure M. Outer Shield Conductor Expanding Tool, Part # 910 121 142.

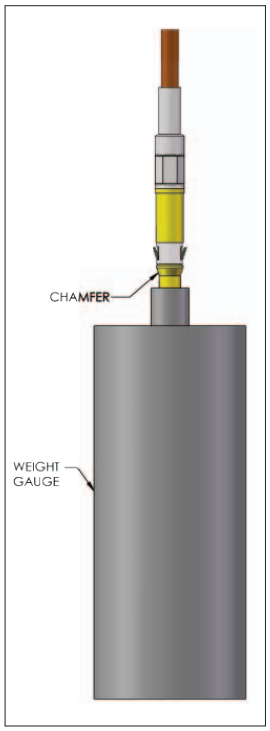

Figure N. Check maximum extraction force with Part # 414 853 000.

Figure O. Outer Shield Conductor Forming Tool, Part # 910 121 126.

MINI COAXIAL ITA CONTACT ASSEMBLY

PART # 610 103 161 FOR 24 & 26 AWG TWISTED PAIR

Dimensions shown: [millimeters]
inches

TOOLS REQUIRED

Crimp Tool, Part # 910 101 118
Crimp Tool, Part # 910 101 115
Crimp Locator, Part # 910 104 128

CRIMP TOOL SETUP

1. Set up the Crimp Tool, Part # 910 101 118 (**Figure A**), by loosening the latch locking screw (counter-clockwise, until turning stops). Remove any previously used locator.
2. Insert the open end of the Crimp Contact Locator, Part # 910 104 128 (**Figure B**) into the locator retainer. Slide the retaining latch toward the locator until it is securely locked into place. The locator may have to be twisted to allow the latch to retain it. Tighten the latch locking screw.

ASSEMBLY INSTRUCTIONS

1. Select correct crimp setting for gauge wire to be used. See Table below. While in closed position, check diameter of the crimp tool with gauge pins to be sure setting is correct. This should be done periodically during use to compensate for wear. For more information about gauge pins, visit vpc.com/gaugepins. See calibration instructions for Part # 910 101 102/103 for pin gauge verification instructions.
2. Untwist 2" [50.8 mm] of twisted wire. Cut 0.5" [12.7 mm] off the white wire and strip white wire 0.160" [4.06 mm] (**Figure C**).
3. Slide $^{1}/_{16}$ [1.58 mm] shrink tubing 0.25" [6.35 mm] long over white wire. Slide crimp ring over both wires (smaller end first) (**Figure D**).
4. Insert wire with center conductor in place at depth allowed by die into Crimp Tool, Part # 910 101 118 (**Figure B**) and close crimp tool handles completely until handles release. Remove crimped center conductor and wire. Gently pull on wire to ensure proper crimp.
5. Slide shield conductor over center conductor until it stops (**Figure E**).
6. Slide shrink tubing over crimped area so that it covers all exposed areas of center conductor and touches dielectric. Heat to shrink (**Figure F**).
7. Re-twist black wire around white conductor and shield. Trim excess wire that extends beyond the shoulder of the shield conductor. Strip black wire such that insulation still covers shrink tubing but not crimp area on shield. Unravel and flare strands around shield (**Figure G**).
8. To ensure proper crimp position, slide shield conductor over the locator pin. Crimp using the Hex Crimp Tool, Part # 910 101 115 (**Figure H**) in hex position "A" for the larger side and hex position "B" for the smaller end (**Figure J**). Wire must not be allowed to pull on the center conductor during crimping (for example, long wire hanging down to floor).

CRIMP SETTINGS

WIRE GAUGE	MAX. (in [mm])	MIN. (in [mm])	PULLOUT FORCE (lbs [N])
26	0.032 [8.12]	0.028 [7.11]	2 [8.89]
24	0.039 [9.91]	0.035 [8.89]	2 [8.89]
22*	0.044 [11.17]	0.039 [9.91]	2 [8.89]
*Acceptable Stranding: 1 x 22; 7 x 30			

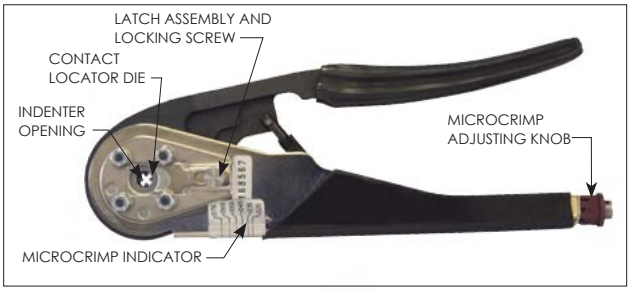

Figure A. Crimp Tool, Part # 910 101 118.

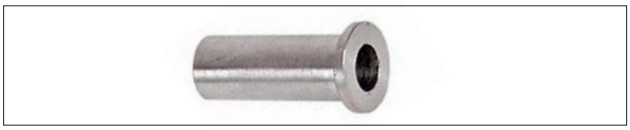

Figure B. Locator, Part # 910 104 128.

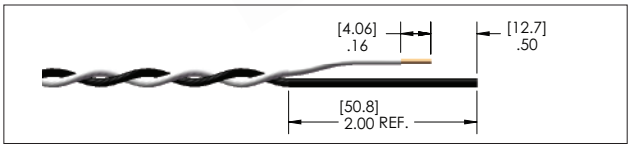

Figure C. Cut and strip wire.

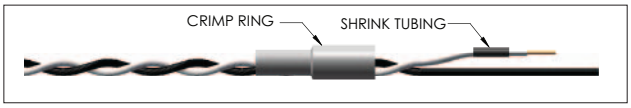

Figure D. Crimp ring and shrink tubing.

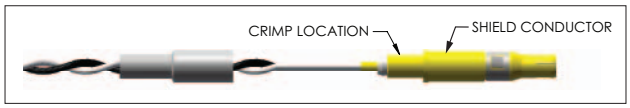

Figure E. Install shield conductor.

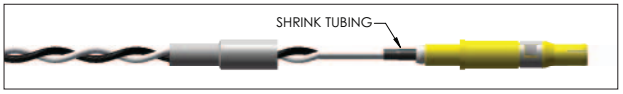

Figure F. Shrink tubing.

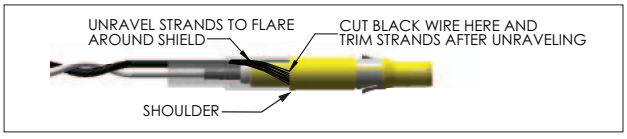

Figure G. Apply crimp ring.

Figure H. Crimp tool, Part # 910 101 115.

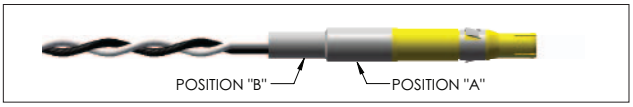

Figure J. Crimp locations.

MINI COAXIAL ITA, SOLDER SLEEVE® , CONTACT ASSEMBLY

PART # 610 103 140 FOR RG316, PART # 610 103 158 FOR RG316

TOOLS REQUIRED

Solder Kit, includes Holding Fixture and Adapter, Part # 910 121 144
Adapter (for those who already own a holding fixture), Part # 910 121 149
Steinel Heat Gun with nozzle, Part # 910 121 160 - 110V or Part # 910 121 167 - 220V

Dimensions shown: [millimeters]
inches

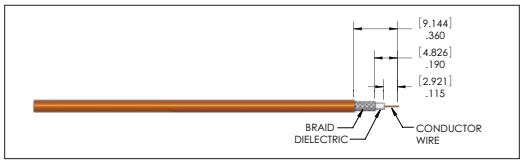

Figure A. Strip wire.

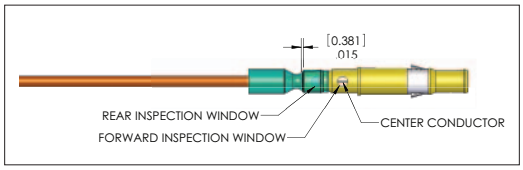

Figure B. Contact on wire.

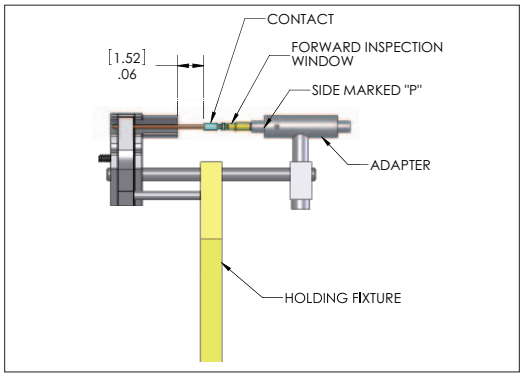

Figure C. Solder fixture.

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Straighten the center conductor making sure the stranded center conductor is twisted into its original lay.
3. Tin stranded center conductor with Sn63 solder per QQ-S-571. Use RMA flux per MIL-F-14256 (Alpha #611 or equivalent).
4. Make sure the shield braid is trimmed evenly and no loose strands are extending out across the exposed dielectric or cable jacket.
5. Smooth the braid ends flat against the cable dielectric.
6. Slide the contact over the end of the prepared cable, and carefully push the contact onto the cable until it stops. Rotating the contact slightly during cable insertion will help prevent the braid from catching.
7. Inspect for proper insertion (**Figure B**). The center conductor must be visible through one of the forward inspection windows. The distance from the rear of the contact outer body to the cable jacket insulation should be .015" [0.38 mm].
8. Install the Adapter, Part # 910 121 149, onto the Holding fixture, Part # 910 121 144 (**Figure C**). Insert a contact in the adapter side marked "P" for pin, and set up the dimensions (**Figure C**).
9. Insert the contact/cable assembly into the adapter. Clamp the cable in the holding fixture. The cable must remain fully inserted in the contact and the contact must be fully inserted in the adapter, for the adapter to act as a heat sink. The cable must be straight between the contact and the cable clamp.
10. Attach the appropriate reflector to the heating tool. See instruction sheet accompanying heat gun for instructions and safety precautions.
11. Using the holding fixture, position the contact in the heating tool reflector, with the forward inspection window centered in the reflector. Continue heating until the small solder preform in the forward inspection window has melted and flowed. The large solder preform in the ear inspection window should have melted and flowed by this time. If it has not, direct hot air at the rear inspection window until it does.
12. If contact is UNDERHEATED, there will be visible remnants of the original shapes of the solder preforms. An underheated contact must be re-heated. If contact is OVERHEATED, solder will wick away from the joint areas, leaving no solder fillets. An overheated contact must be removed and a new contact installed.
13. After the contact has cooled for at least 10 seconds, remove the contact and cable from the holding fixture.
14. Inspect the completed termination for correct assembly. The cable shield must extend into the contact at least as far as the front edge of the rear inspection windows. The center conductor must be visible through one of the forward inspection windows.

MINI COAXIAL ITA, SOLDER SLEEVE®, CONTACT ASSEMBLY

PART # 610 103 140 FOR RG178, PART # 610 103 158 FOR RG178

TOOLS REQUIRED

Solder Kit, includes Holding Fixture and Adapter, Part # 910 121 144
Adapter (for those who already own a holding fixture), Part # 910 121 149
Steinel Heat Gun with nozzle, Part # 910 121 160 - 110V or Part # 910 121 167 - 220V

Dimensions shown: [millimeters]
inches

ASSEMBLY INSTRUCTIONS

1. Strip wire (**Figure A**).
2. Straighten the center conductor making sure the stranded center conductor is twisted into its original lay.
3. Tin stranded center conductor with Sn63 solder per QQ-S-571. Use RMA flux per MIL-F-14256 (Alpha #611 or equivalent).
4. Fold the center conductor back on itself (**Figure B**).
5. Make sure the shield braid is trimmed evenly and no loose strands are extending out across the exposed dielectric or cable jacket.
6. Smooth the braid ends flat against the cable jacket.
7. Slide the contact over the end of the prepared cable, and carefully push the contact onto the cable until it stops. Rotating the contact slightly during cable insertion will help prevent the braid from catching.
8. Inspect for proper insertion (**Figure C**). The center conductor must be visible through one of the forward inspection windows. The distance from the rear of the contact outer body to the cable jacket insulation should be .015" [0.38 mm].
9. Install the Adapter, Part # 910 121 149, onto the Holding Fixture, Part # 910 121 144 (**Figure D**). Insert a contact in the adapter side marked "P" for pin, and set up the dimensions (**Figure D**).
10. Insert the contact/cable assembly into the adapter. Clamp the cable in the holding fixture. The cable must remain fully inserted in the contact and the contact must be fully inserted in the adapter for adapter to act as a heat sink. The cable must be straight between the contact and the cable clamp.
11. Attach the appropriate reflector to the heating tool. See instruction sheet accompanying heat gun for instructions and safety precautions.
12. Using the holding fixture, position the contact in the heating tool reflector, with the forward inspection window centered in the reflector. Continue heating until the small solder preform in the forward inspection window has melted and flowed. The large solder preform in the rear inspection window should have melted and flowed by this time; if it has not, direct hot air at the rear inspection window until it does.
13. If contact is UNDERHEATED, there will be visible remnants of the original shapes of the solder preforms. An underheated contact must be re-heated. If contact is OVERHEATED, solder will wick away from the joint areas, leaving no solder fillets. An overheated contact must be removed and a new contact installed.
14. After the contact has cooled for at least 10 seconds, remove the contact and cable from the holding fixture.
15. Inspect the completed termination for correct assembly. The cable shield must extend into the contact at least as far as the front edge of the rear inspection windows. The center conductor must be visible through one of the forward inspection windows.

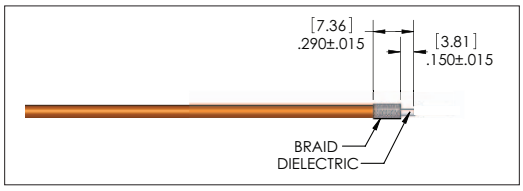

Figure A. Strip wire.

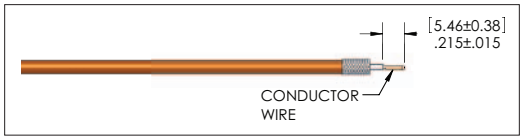

Figure B. Fold center conductor.

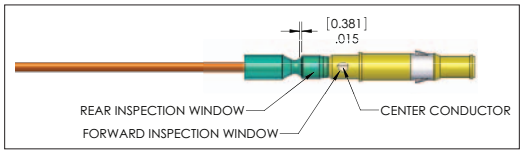

Figure C. Contact on wire.

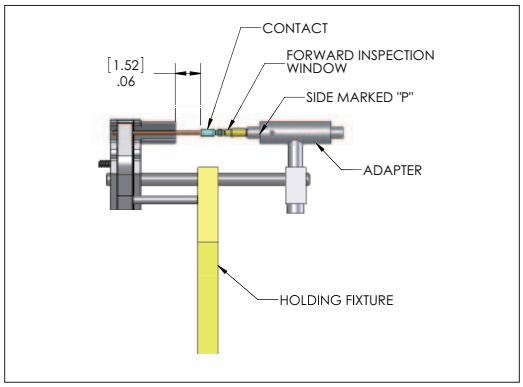

Figure D. Solder fixture.

MINI COAXIAL WIRE-WRAP CONTACT TERMINATION

PART # 610 104 140 (RECEIVER), 610 103 129 (ITA)

TOOLS REQUIRED
Wire Stripping Tool
Wire-wrap gun
Wire-wrap bit

ASSEMBLY INSTRUCTIONS

NOTE: VPC performs wire-wrap terminations in accordance with IPC-A-620 standards.

NOTE: Wire-wraps must be performed with solid wire. Stranded wire will not work for wire wrapping. VPC recommends 26 to 30 AWG wire.

1. Cut and strip the wire. Depending on the style of wire-wrap gun and bit used, the wire is either stripped during the wrapping process or needs to be stripped before the wrapping process.

NOTE: Refer to the user manual of your wire-wrap gun to determine in which fashion your tool operates.

2. Insert the wire into the wire slot on the wire-wrap gun. With modified and standard bits insert the wire in the wire slot as deep as possible. With C.S.W. bits the wire has to be inserted all the way through the wire slot until it goes out of the cutting window. The simplified sleeve of the manual tool has no notch.

3. Hold the wire in place by hand (**Figure A**).

4. Position the terminal hole of the wire-wrap gun on the post to be wrapped. The wire-wrap gun should be parallel with the contact. The wire must continue to be held in place by hand.

5. Engage the wire-wrap gun to wrap the wire. During the wrapping operation, gently press the tool forward onto the wire-wrap post. The turns of the connection have to be nicely wrapped against the other. Do not push too hard. Do not pull backwards.

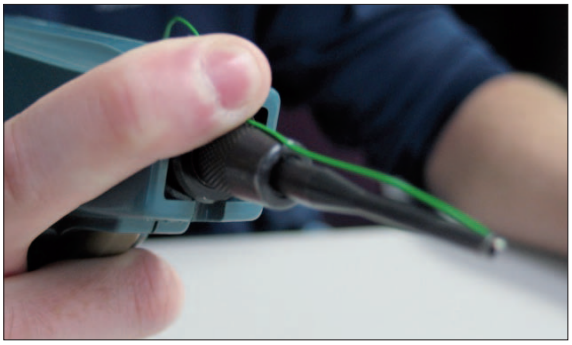

Figure A. Wire wrap gun with wire.

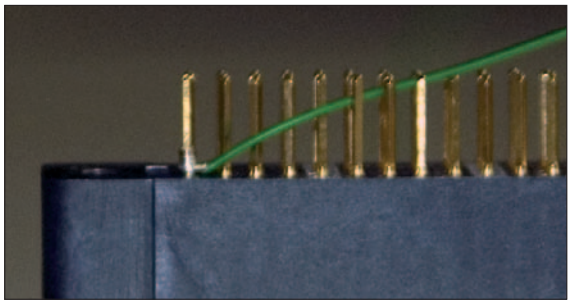

Figure B. Completed wrapped wire.

MINI COAXIAL RECEIVER CONTACT INSTALLATION AND REMOVAL

TOOLS REQUIRED
0.050" Allen Wrench
Flat Head Screwdriver
Phillips Screwdriver for iCon modules
Mini Power/Mini Coaxial Extraction Tool, Part # 910 112 104

CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.
   NOTE: For more information concerning the contact assembly process, see contact assembly instructions in Section 1 of this User's Manual.

2. Insert the assembled contact into the back (wiring side) of the assembled module. The contact can only go into one side. Ensure that the contact is squared up with the corresponding module location. Once in place, pull the wire slightly to ensure that the contact is seated.

CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame.
   NOTE: For more information concerning the process of removing the module from the receiver frame, see module installation and removal instructions in Section 5 of this User's Manual.

2. Use the appropriate tool to remove the module cap screws located at the top and bottom of the module (**Figure A**).

3. Grasp the module halves and apply force in opposite directions, rocking the ends of the module while slightly pulling the module cap away from the mating bottom section. Be sure to open both sides of the module simultaneously or contacts could be damaged.

4. Place the Mini Power/Mini Coaxial Extraction Tool, part # 910 112 104 (**Figure B**), over the contact to be removed/replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or contact could be damaged.

5. Once the extraction tool is seated and the retaining ring tabs on the contact are compressed, push the plunger. The contact will be pushed out of the rear of the module.

6. For 19 and 76 position modules, do not tighten screws. Insert an ITA contact in positions 2 and 18 or 2A and 18A (for 76 position modules) to properly align the module cap. With the ITA contacts in place, tighten the module cap screws. Do not over-tighten screws; screw torque limit is 13 +/- 1 in-oz.

   For all other modules, replace the module cap (**Figure C**) using both hands to push the separated halves together. Replace and tighten the module cap screws to a maximum torque of 2 in-lbs [0.23 Nm].

DO NOT PUSH THE TOOL INTO THE MODULE UNTIL THE TIP OF THE EXTRACTION TOOL HAS BEEN FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT.

NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.

NOTE: If you are using a hybrid module, you may need to reference the User's Manual for the other contact type for extraction instructions.

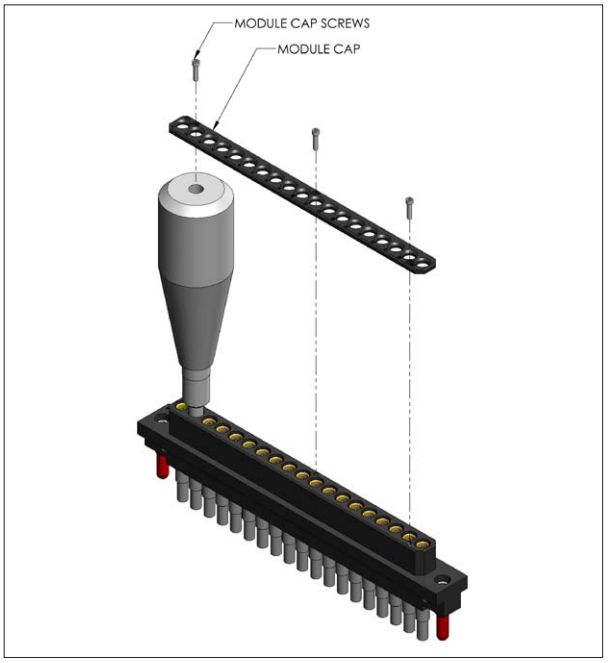

Figure A. Extraction Tool, Part # 910 112 104.

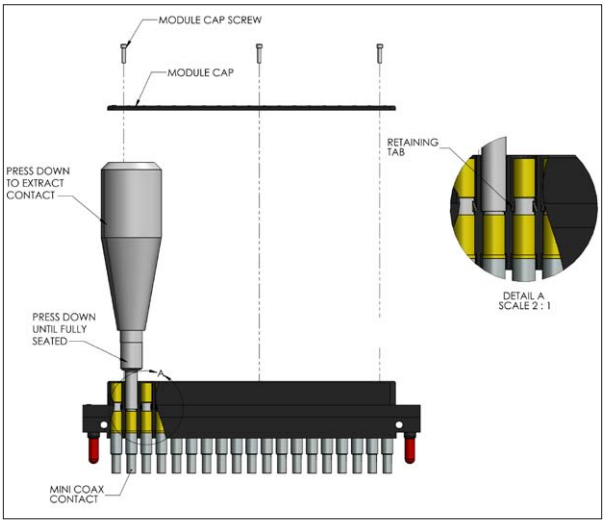

Figure B. Be sure to keep the tool perpendicular so as to avoid bent pins.

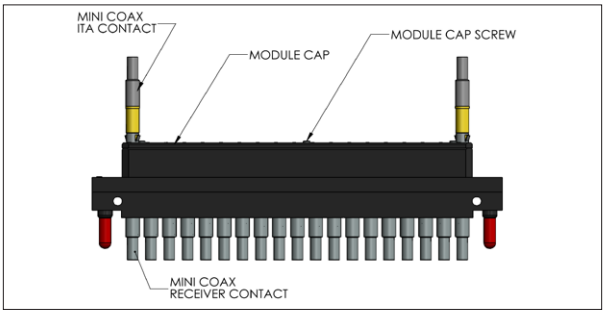

Figure C. Module Cap Alignment Diagram.

MINI COAXIAL ITA CONTACT INSTALLATION AND REMOVAL

TOOLS REQUIRED
Mini Coaxial Extraction Tool, Part # 910 112 104

CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.
   NOTE: For more information concerning the contact assembly process, see contact assembly instructions in Section 2 of this User's Manual.

2. Insert the assembled contact into the back (wiring side) of the module. Push the contact forward until the crimp is inside the module housing. Once in place, pull the wire slightly to ensure the contact is seated.

CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the ITA frame.
   NOTE: For more information concerning the process of removing the module from the ITA frame, see module installation and removal instructions in Section 5 of this User's Manual.

2. Place the Mini Power/Mini Coaxial Extraction Tool, part # 910 112 104 (**Figure A**) over the contact to be removed/replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or contact could be damaged. Rotate the tool slightly while pushing it into the counter bore on the mating side of the module.

3. Once the extraction tool is seated properly and the retaining ring tabs on the contact are compressed, push the tool into the module. The contact will be pushed out of the rear of the module (**Figure B**).

DO NOT PUSH THE TOOL INTO THE MODULE UNTIL THE TIP OF THE EXTRACTION TOOL HAS BEEN FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT.

NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.

NOTE: If you are using a hybrid module, you may need to reference the User's Manual for the other contact type for extraction instructions.

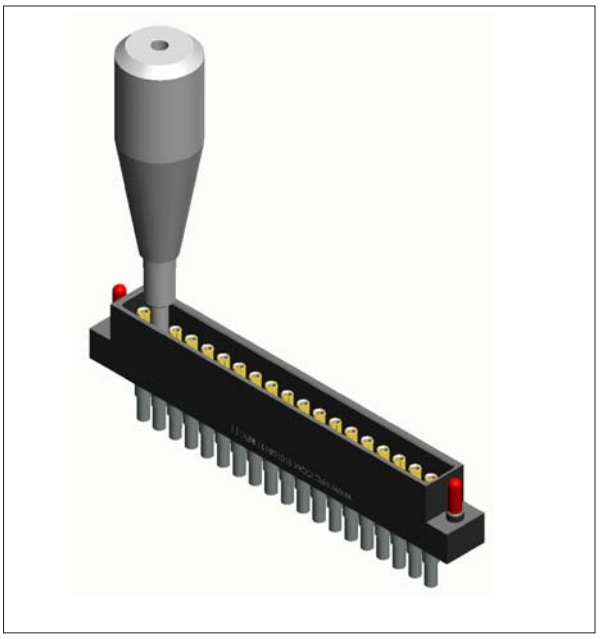

Figure A. Extraction Tool, Part # 910 112 104.

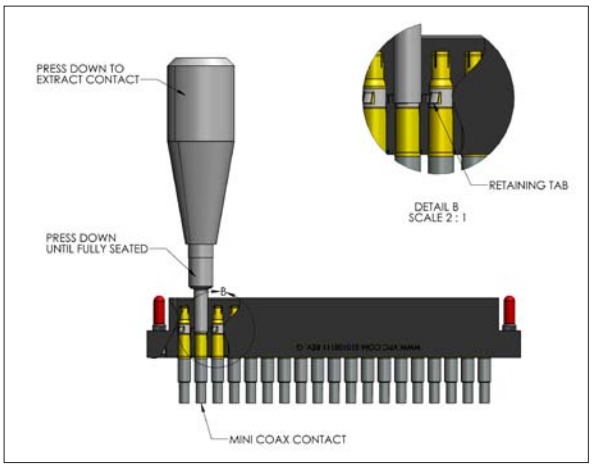

Figure B. Be sure to keep the tool perpendicular to avoid bent pins.

MINI COAXIAL STANDARD/90 SERIES MODULE INSTALLATION AND REMOVAL

TOOLS REQUIRED

$^{3}/_{32}$ Allen Wrench

INSTALLATION INSTRUCTIONS

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Ensure that Position 1 is located at the top for systems in which the modules are oriented vertically or to the left for systems in which the modules are oriented horizontally.
2. Using a $^{3}/_{32}$ Allen wrench, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
3. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
4. Repeat this sequence until the module is seated. Torque the screw to 4 in-lbs [0.45 Nm].

REMOVAL INSTRUCTIONS

1. To remove, loosen the top screw 1 to 2 full revolutions. Loosen bottom screw 1 to 2 full revolutions.
2. Repeat this sequence until the module is separated from the receiver or ITA.

NOTE: For optimum performance and system longevity, distribute the contact load evenly throughout the module.

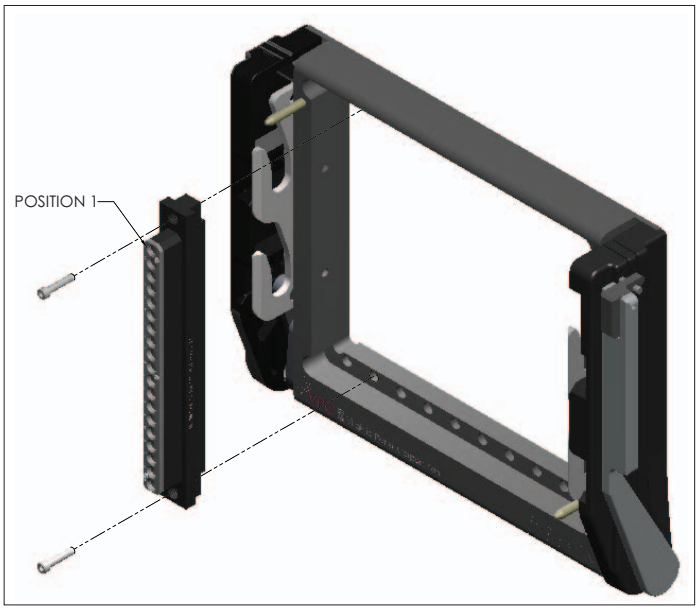

Figure A. Receiver Module.

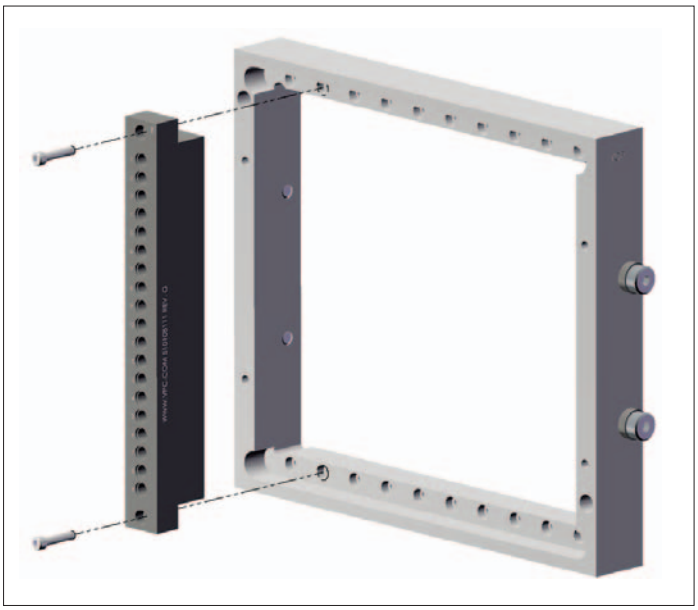

Figure B. ITA Module.

MINI COAXIAL ICON MODULE INSTALLATION AND REMOVAL

TOOLS REQUIRED
Phillips Head Screwdriver

INSTALLATION INSTRUCTIONS

NOTE: The receiver strain relief plate or the ITA cover may need to be removed prior to installing or removing an iCon module. Please refer to the appropriate User's Manual for instructions on how to perform these steps.

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Install modules such that Position 1 is located at the top of the ITA/ receiver frame.
2. Using a Phillips head screwdriver, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
3. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
4. Repeat this sequence until the module is seated. Torque the screw to 1.5 in-lbs [0.16 Nm].

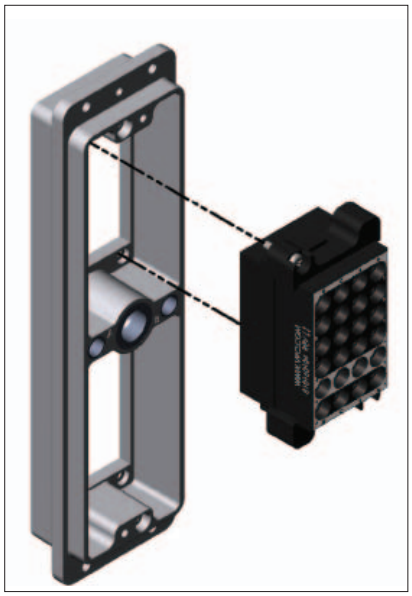

Figure A. Receiver Module.

REMOVAL INSTRUCTIONS

1. To remove, loosen the top screw 1 to 2 full revolutions. Loosen bottom screw 1 to 2 full revolutions.
2. Repeat this sequence until the module is separated from the receiver or ITA.

NOTE: For optimum performance and system longevity, distribute the contact load evenly throughout the module.

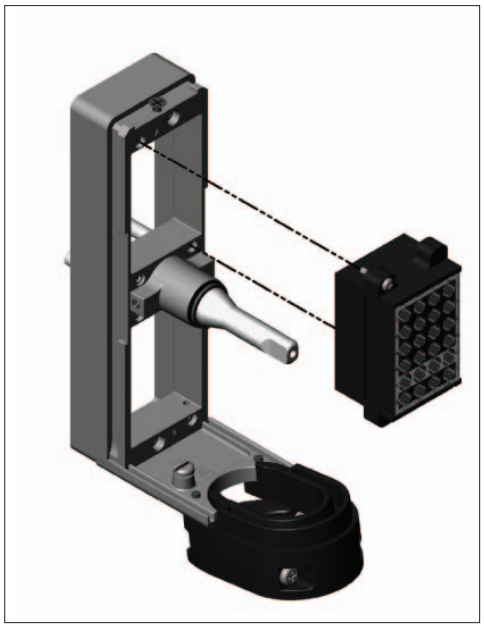

Figure B. ITA Module.

CROSS REFERENCE TABLES

	STANDARD/ 90 SERIES RECEIVER MODULES			ICON RECEIVER MODULES			CASS/ 80 SERIES RECEIVER MODULES		CRIMP TOOL	EXTRACTION	MISC.							
RECEIVER CONTACTS	510 104 120	510 104 150	510 104 243	510 160 102	510 160 103	510 160 104	510 113 121	510 113 122	910 101 115	910 112 104	910 121 119	910 121 131	910 121 143	910 121 144	910 121 149	910 121 156	910 121 160	910 121 167
610 104 114	X	X	X	X	X	X	X	X	X	X	X	X	X			X		
610 104 140	X	X	X	X	X	X	X	X		X		X				X		
610 104 141	X	X	X	X	X	X	X	X	X	X	X	X	X			X		
610 104 142	X	X	X	X	X	X	X	X		X		X		X	X	X	X	X
610 104 149	X	X	X	X	X	X			X	X		X	X			X		
610 104 154	X	X	X	X	X	X			X	X			X			X		

	STANDARD/ 90 SERIES ITA MODULES			ICON ITA MODULES			CASS/ 80 SERIES ITA MODULES		CRIMP TOOLS		LOCATOR	EXTRACTION	MISC.							
ITA CONTACTS	510 108 111	510 108 132	510 108 210	510 161 102	510 161 103	510 161 104	510 114 108	510 114 109	910 101 115	910 101 118	910 104 128	910 112 104	910 121 126	910 121 142	910 121 144	910 121 149	910 121 155	910 121 157	910 121 160	910 121 167
610 103 115	X	X	X	X	X	X	X	X	X			X	X	X			X	X		
610 103 130	X	X	X	X	X	X	X	X	X			X	X	X			X	X		
610 103 136	X	X	X	X	X	X				X	X	X	X	X			X	X		
610 103 140	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X
610 103 152	X	X	X	X	X	X			X			X	X	X			X	X		
610 103 157	X	X	X	X	X	X	X	X	X			X	X	X			X	X		
610 103 158	X	X	X	X	X	X	X	X				X			X	X			X	X
610 103 161	X	X	X	X	X	X			X	X	X	X	X	X			X	X		
610 103 166	X	X	X	X	X	X	X	X		X	X	X								
610 103 172	X	X	X	X	X	X				X	X	X								
610 113 146	X	X	X	X	X	X			X	X	X	X	X	X			X	X		